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Synthesis, acid-base properties, and interphase distribution of new aminoalkylphosphates and -phosphonates

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Abstract

Using the Todd-Atherton reaction, we synthesized new ω- aminoalkylphosphates differing by location of phosphate amino group in the molecule. For these compounds and for α-, β-, and γ-amino-phosphonates of similar structure ionization constants of phosphate and phosphonate groups were determined which turned out to be similar. In all the cases the increase in basicity of amine centers was shown with the growing distance between them and the phosphorus-containing substituent. By the method of two-phase potentiometric titration the constants of partition between water and a series of organic solvents were measured. The data obtained are interpreted in the framework of additive Leo-Hansch model that allows estimation of the increments of phosphate and amidophosphate groups. These data can be applied to the study of biological activity and extraction properties of the compound of such class. © 2008 MAIK Nauka.

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